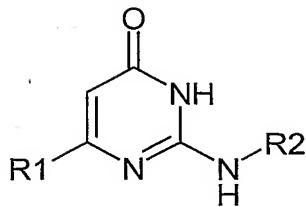


What is claimed is:

1. A compound of the formula I, or a salt, solvate, or a physiologically functional derivative thereof

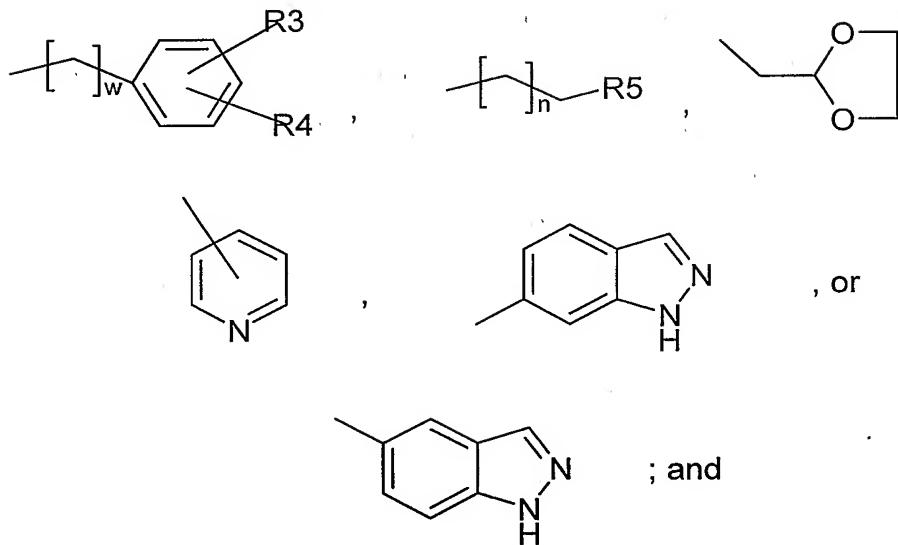


I

in which

R2 is a radical of the formula

10

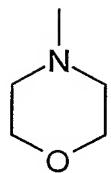


in which

15 n = 1 - 2;

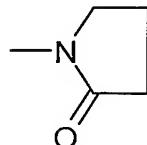
 w = 0 - 2;

R3 and R4 are independently hydrogen, hydroxy, -OR6, halogen, -SO2NH2, -OH, -C1-alkyl, -(C=O)-OEt, -NH(C=O)-CH3, or a radical of the formula



; and

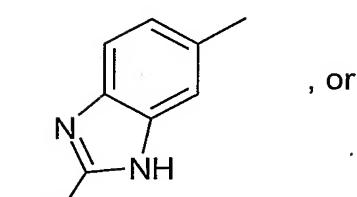
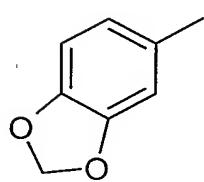
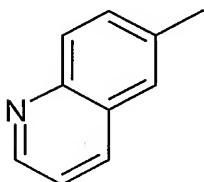
R5 is $-\text{NH}_2$, hydrogen, $-\text{OR}_6$, $-\text{N}(\text{R}_6)(\text{R}_7)$, or a radical of the formula



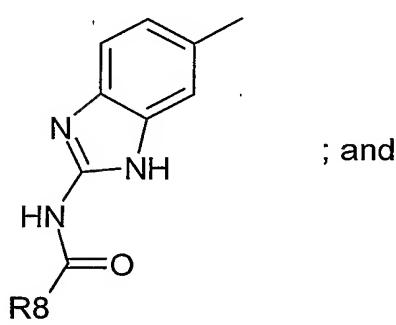
; and

5

R1 is a radical of the formula

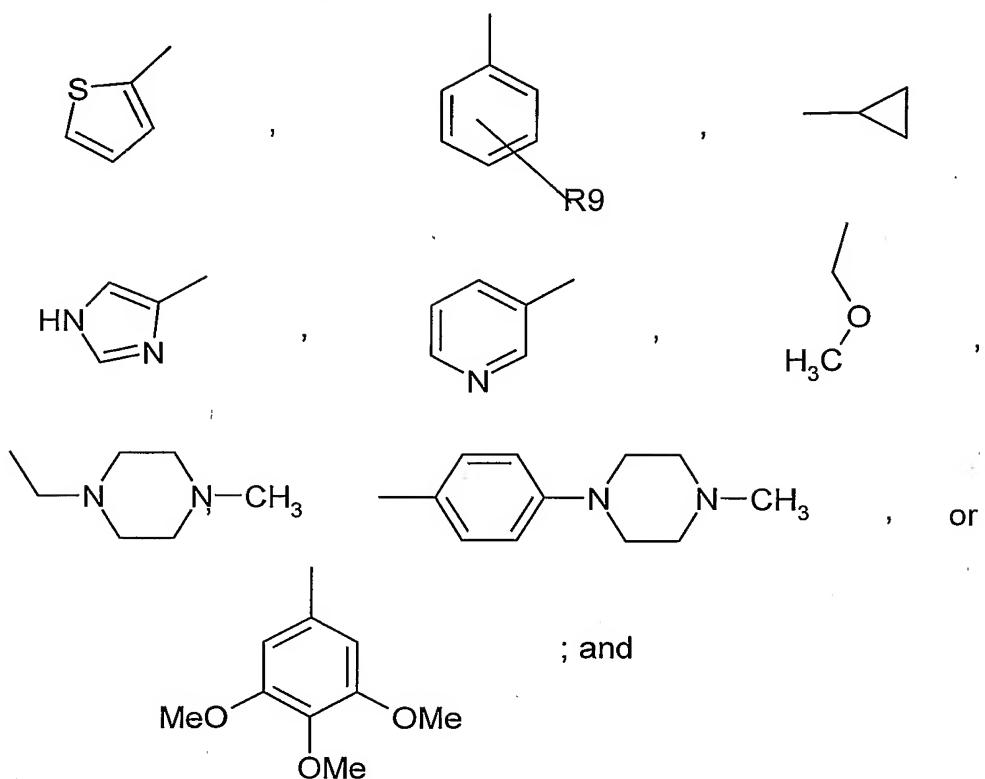


, or



; and

R8 is a radical of the formula

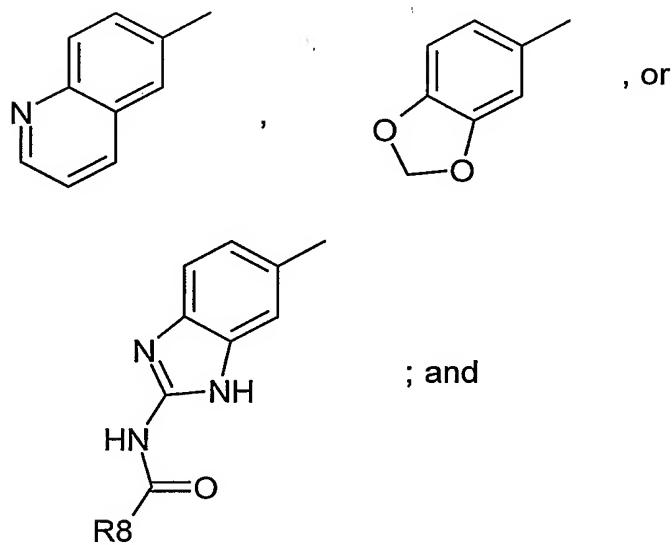


R9 is $\text{-NH}(\text{C=O})\text{CH}_3$, $\text{-SO}_2\text{NH}_2$, $\text{-SO}_2\text{N}(\text{R6})(\text{R7})$; and

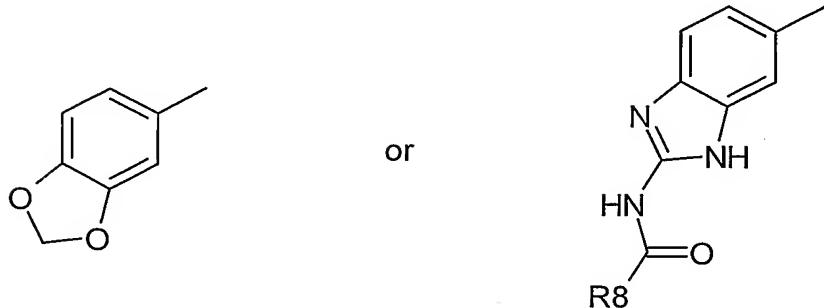
R6 and R7 are independently C₁-alkyl.

5

2. A compound of claim 1 in which R1 is a radical of the formula



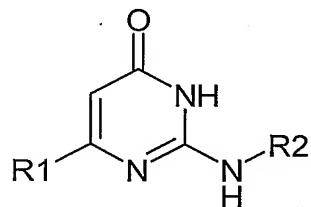
3. A compound of claim 2 in which R1 is a radical of the formula



4. A compound of claim 3 in which R8 is 2-thienyl.

5

5. A method of inhibiting hYAK3 in a mammal; comprising, administering to the mammal a therapeutically effective amount of a compound of formula I, or a salt, solvate, or a physiologically functional derivative thereof

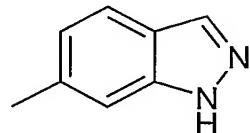
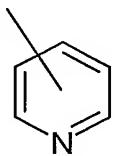
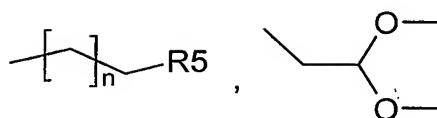
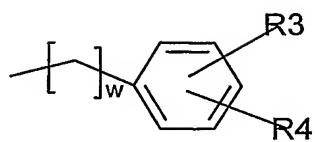


10

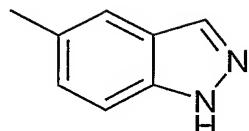
I

in which

R2 is a radical of the formula



, or



; and

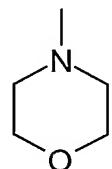
in which

$$n = 1 - 2;$$

$$5 \quad w = 0 - 2;$$

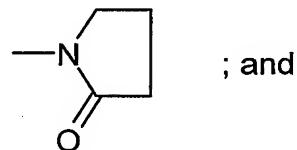
R3 and R4 are independently hydrogen, hydroxy, -OR6, halogen, -SO₂NH₂, -OH, -C₁₋₆alkyl, -(C=O)-OEt, -NH(C=O)-CH₃, or a radical of the formula

10



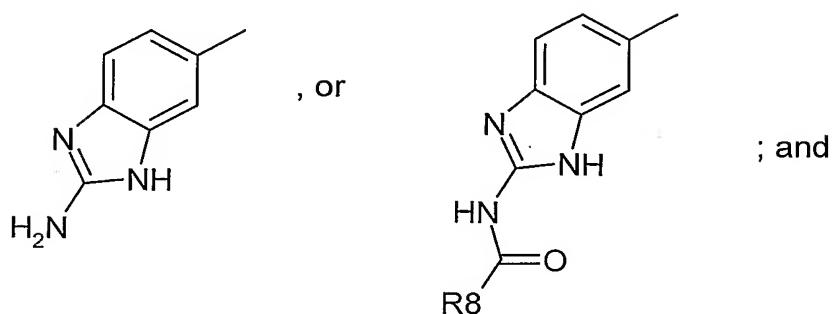
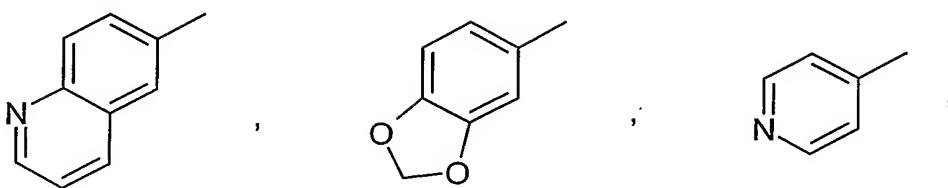
; and

R5 is -NH₂, hydrogen, -OR6, -N(R6)(R7), or a radical of the formula

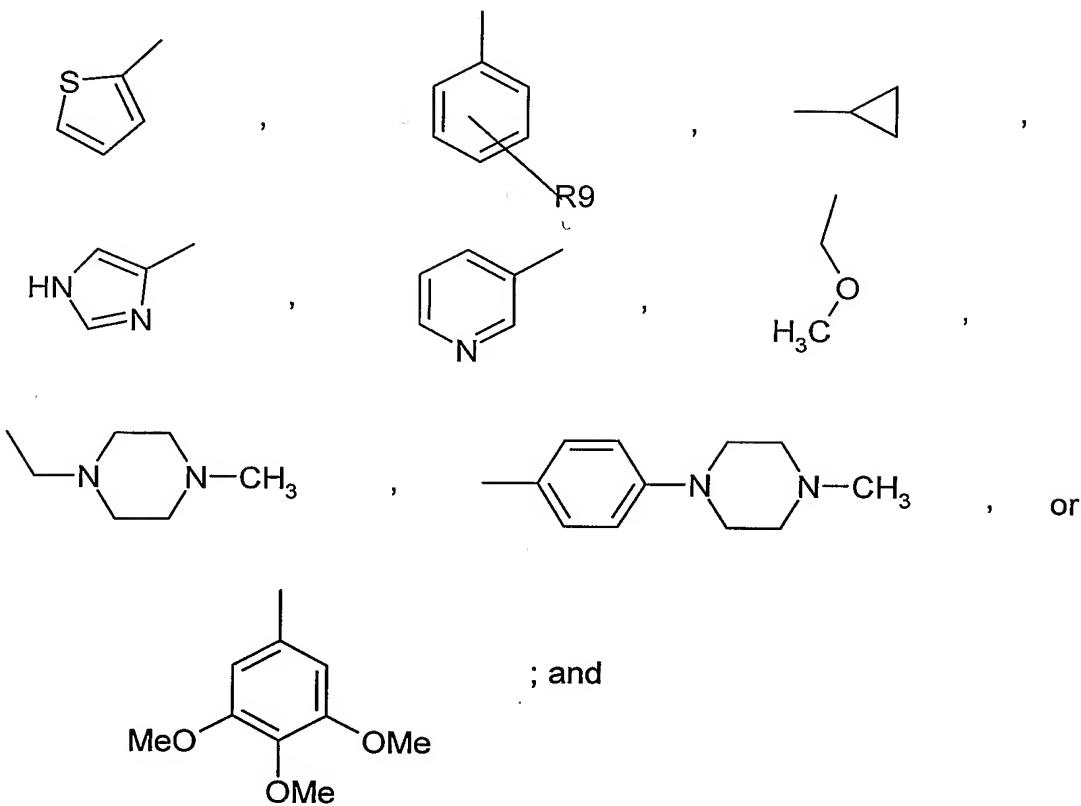


R1 is a radical of the formula

15



R8 is a radical of the formula



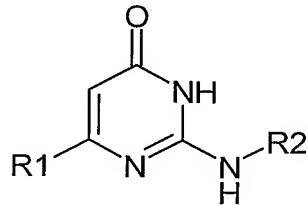
R9 is $\text{-NH}(\text{C=O})\text{CH}_3$, $\text{-SO}_2\text{NH}_2$, $\text{-SO}_2\text{N}(\text{R6})(\text{R7})$; and

5

R6 and R7 are independently $\text{C}_1\text{-alkyl}$.

6. A method of treating or preventing diseases of the erythroid and hematopoietic systems, caused by the hYAK3 imbalance or inappropriate activity; comprising, administering to a mammal a therapeutically effective amount of a compound formula

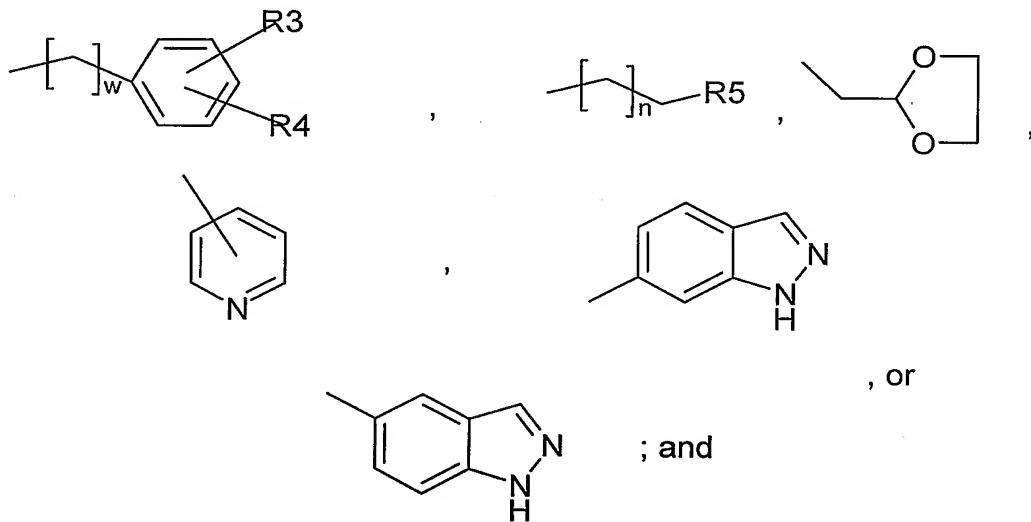
5 I, or a salt, solvate, or a physiologically functional derivative thereof



I

in which

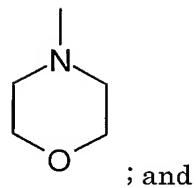
10 R2 is a radical of the formula



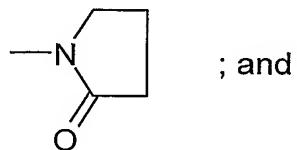
in which

15 n = 1 - 2;
w = 0 - 2;

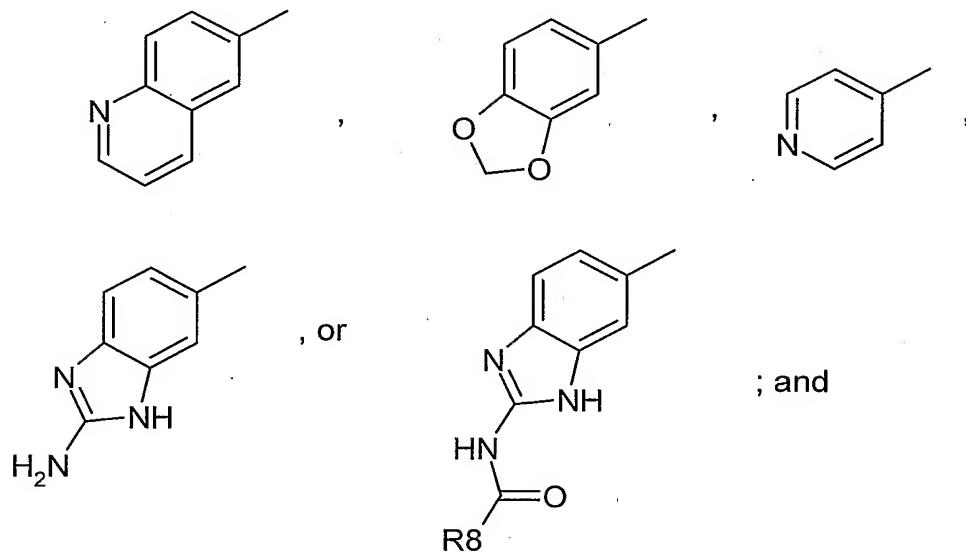
R3 and R4 are independently hydrogen, hydroxy, -OR6, halogen, -SO2NH2, -OH, -C1-6alkyl, -(C=O)-OEt, -NH(C=O)-CH3, or a radical of the formula



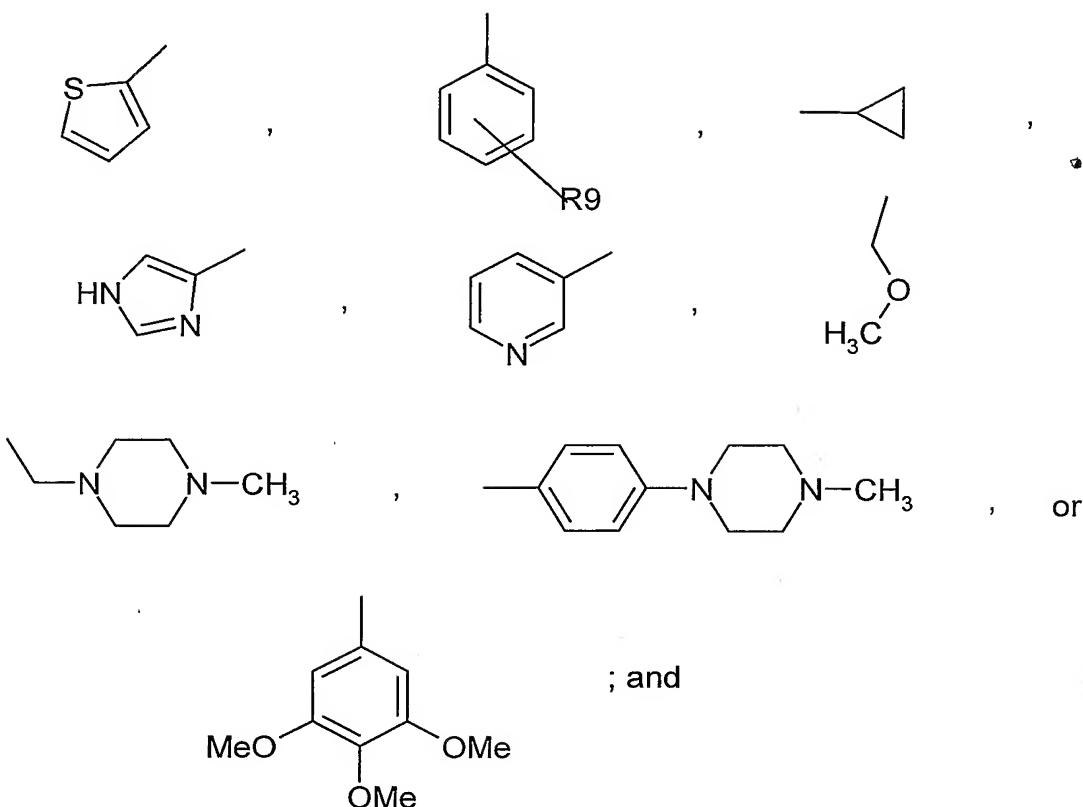
R5 is $-\text{NH}_2$, hydrogen, $-\text{OR}_6$, $-\text{N}(\text{R}_6)(\text{R}_7)$, or a radical of the formula



5 R1 is a radical of the formula



R8 is a radical of the formula



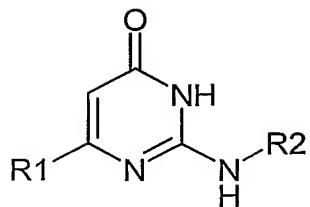
R9 is $\text{-NH}(\text{C=O})\text{CH}_3$, $\text{-SO}_2\text{NH}_2$, $\text{-SO}_2\text{N}(\text{R6})(\text{R7})$; and

R6 and R7 are independently C₁-alkyl.

5

7. A method of claim 6 in which diseases of the erythroid and hematopoietic systems are selected from the group consisting of: anemia, aplastic anemia, myelodysplastic syndrome, myelosuppression, and cytopenia.

10 8. A method of treating or preventing diseases selected from the group consisting of: anemia, aplastic anemia, myelodysplastic syndrome, myelosuppression, and cytopenia; comprising, administering to a mammal a therapeutically effective amount of a compound formula I, or a salt, solvate, or a physiologically functional derivative thereof

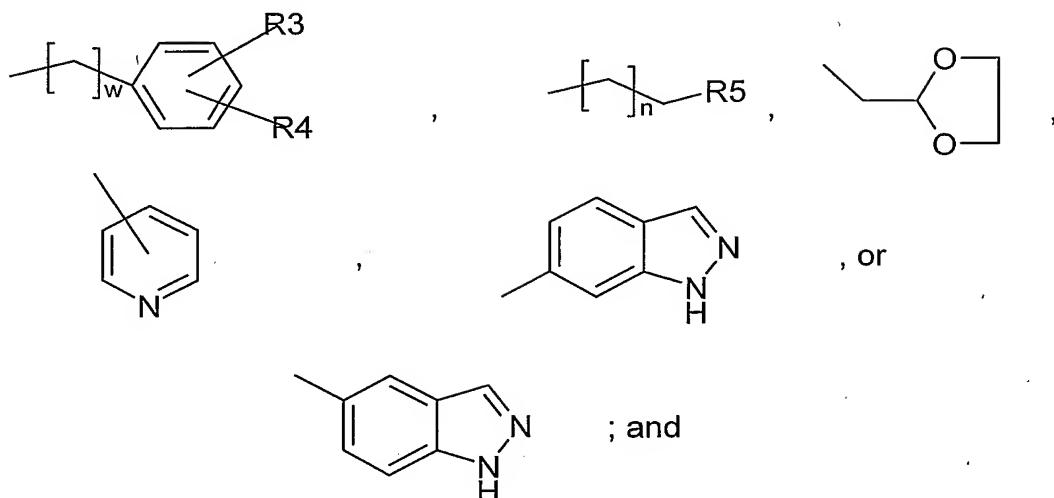


I

in which

R2 is a radical of the formula

5

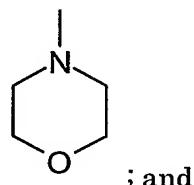


in which

n = 1 - 2;

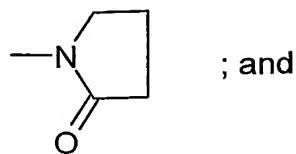
10 w = 0 - 2;

R3 and R4 are independently hydrogen, hydroxy, -OR6, halogen, -SO2NH2, -OH, -C1-6alkyl, -(C=O)-OEt, -NH(C=O)-CH3, or a radical of the formula

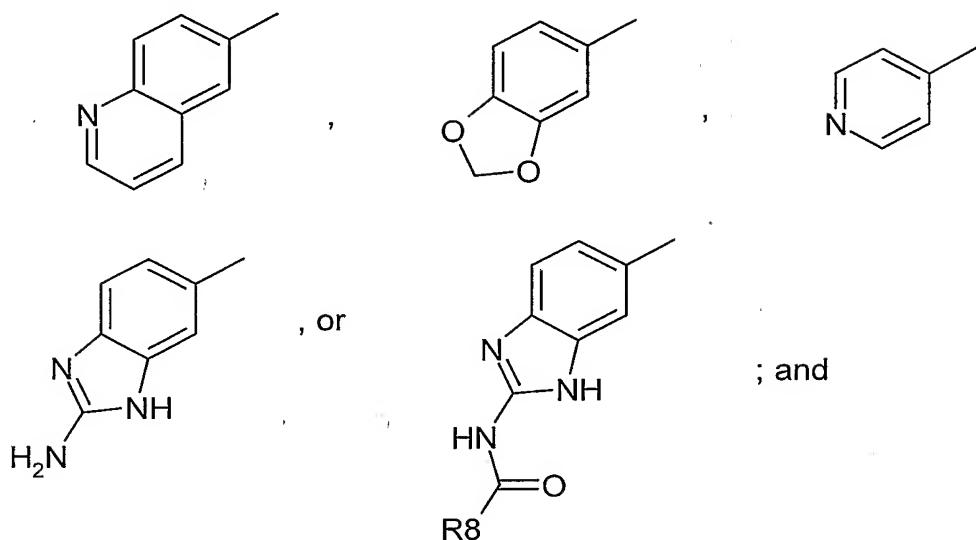


; and

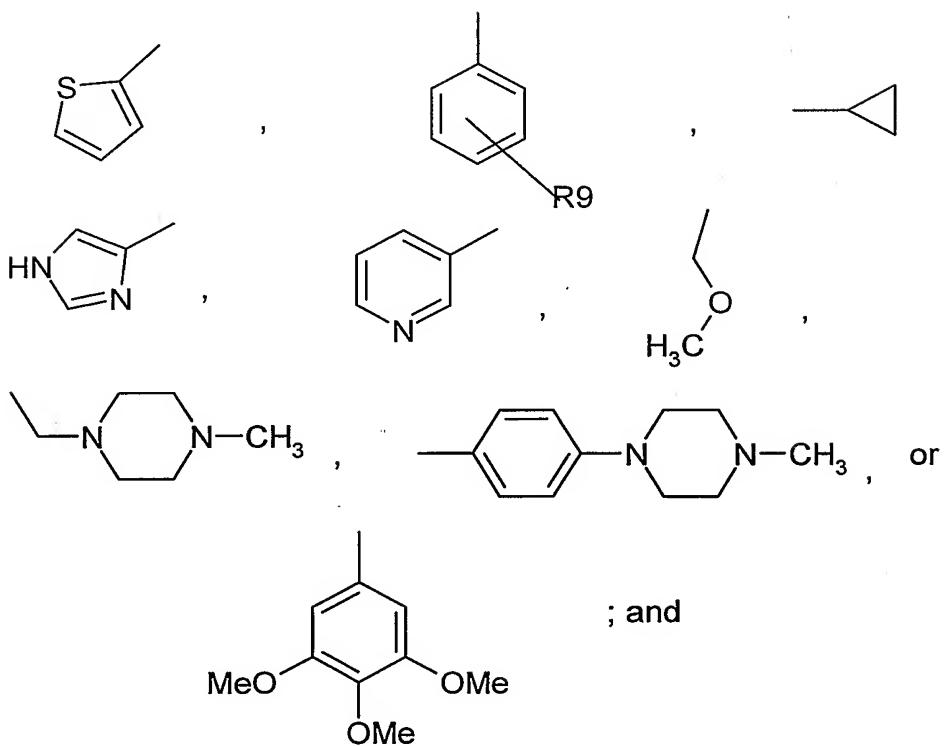
15 R5 is -NH2, hydrogen, -OR6, -N(R6)(R7), or a radical of the formula



R1 is a radical of the formula



R8 is a radical of the formula

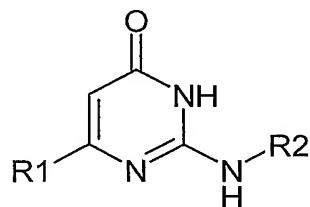


R9 is $\text{-NH}(\text{C=O})\text{CH}_3$, $\text{-SO}_2\text{NH}_2$, $\text{-SO}_2\text{N}(\text{R6})(\text{R7})$; and

R6 and R7 are independently C₁-6alkyl.

5

9. A pharmaceutical composition including a therapeutically effective amount of a compound formula I, or a salt, solvate, or a physiologically functional derivative thereof, and one or more pharmaceutically acceptable carriers, diluents and excipients

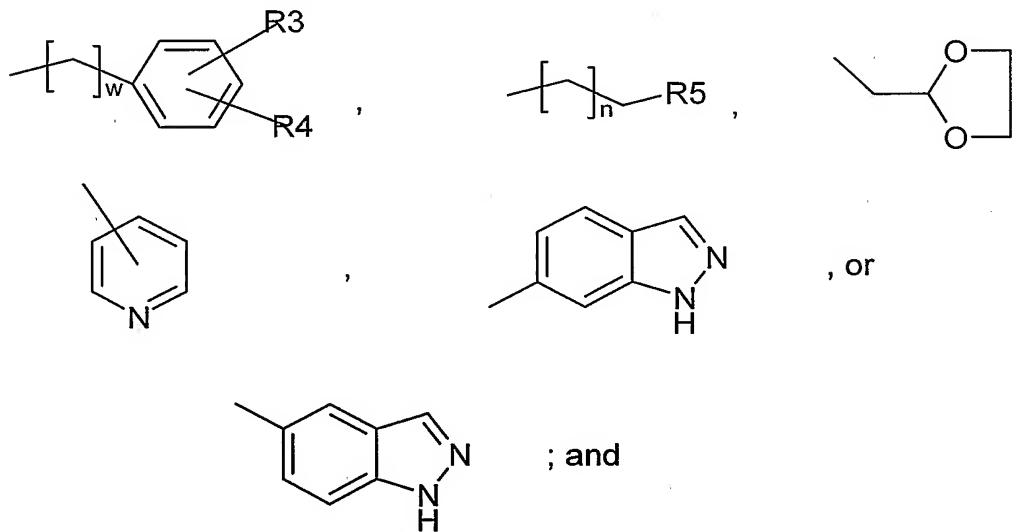


10

I

in which

R2 is a radical of the formula

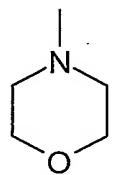


15 in which

n = 1 - 2;

w = 0 - 2;

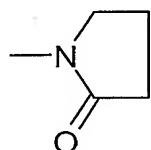
R3 and R4 are independently hydrogen, hydroxy, -OR6, halogen, -SO₂NH₂, -OH, -C₁₋₆alkyl, -(C=O)-OEt, -NH(C=O)-CH₃, or a radical of the formula



; and

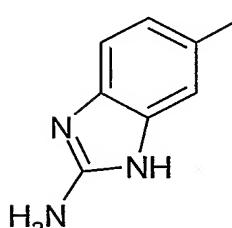
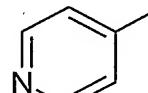
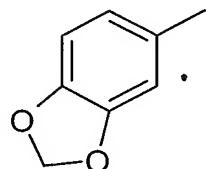
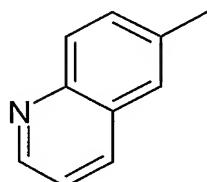
5

R5 is -NH₂, hydrogen, -OR6, -N(R6)(R7), or a radical of the formula

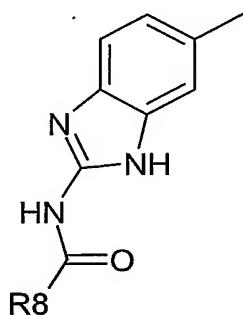


; and

R1 is a radical of the formula



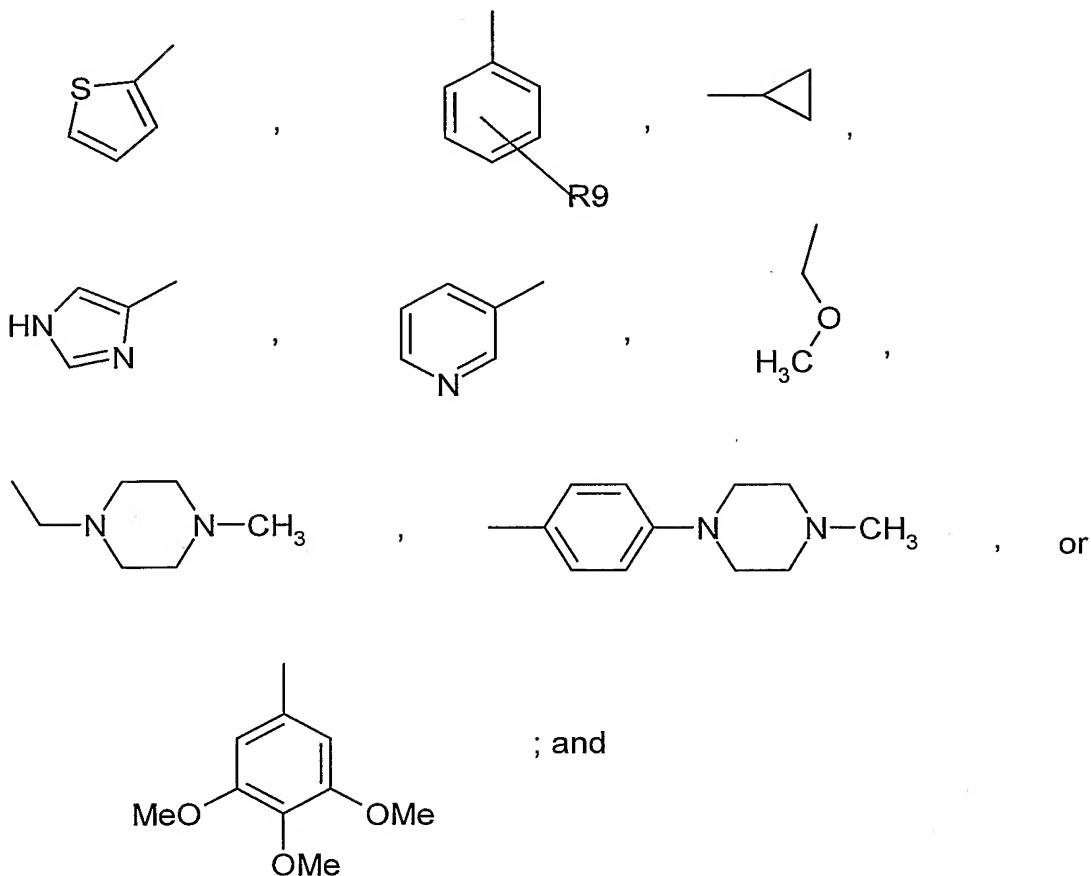
, or



; and

10

R8 is a radical of the formula



R9 is $-\text{NH}(\text{C}=\text{O})\text{CH}_3$, $-\text{SO}_2\text{NH}_2$, $-\text{SO}_2\text{N}(\text{R6})(\text{R7})$; and

R6 and R7 are independently C₁-6alkyl.

5

10. A compound selected from the group consisting of:

2-(2-Aminoethylamino)-6-quinolin-6-yl-3H-pyrimidin-4-one;

2-(2-Dimethylaminoethylamino)-6-quinolin-6-yl-1H-pyrimidin-4-one;

10 2-(3-Methoxybenzylamino)-6-quinolin-6-yl-1H-pyrimidin-4-one;

2-{{2,6-Bis(methoxy)phenyl]amino}-6-(6-quinolinyl)-4(1H)-pyrimidinone;

N-(5-{{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-{5-[6-Oxo-2-(4-pyridinylamino)-1,6-dihydro-4-pyrimidinyl]-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-[5-(2-{{3-(Aminosulfonyl)phenyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

5 N-{5-[6-Oxo-2-(phenylamino)-1,6-dihydro-4-pyrimidinyl]-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-{5-{{2-[(3-Hydroxyphenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

10 N-{5-[2-(1H-Indazol-6-ylamino)-6-oxo-1,6-dihydro-4-pyrimidinyl]-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-[5-(2-{{4-(Methyloxy)phenyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

15 N-{5-(2-{{2-(Methyloxy)ethyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-[5-(2-{{2-(Methyloxy)phenyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

N-[5-(2-{{3-(Methyloxy)phenyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

20

N-[5-(2-{{3-(Dimethylamino)propyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

25 N-[5-(2-{{2-(2,4-Dichlorophenyl)ethyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

N-[5-(2-{{2-(4-Morpholinyl)phenyl}amino}-6-oxo-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

N-(5-{{2-[(2-Fluorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-2-thiophenecarboxamide;

5 N-(5-{{2-[(2,5-Dichlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-2-thiophenecarboxamide;

N-{{5-[2-(Ethylamino)-6-oxo-1,6-dihydro-4-pyrimidinyl]-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

N-(5-{{2-[(2-Methylphenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-2-thiophenecarboxamide;

N-[5-(6-Oxo-2-{{3-(2-oxo-1-pyrrolidinyl)propyl}amino}-1,6-dihydro-4-pyrimidinyl)-1H-benzimidazol-2-yl]-2-thiophenecarboxamide;

N-(5-{{2-[(1,3-Dioxolan-2-ylmethyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-2-thiophenecarboxamide;

15 3-(Acetylamino)-N-(5-{{2-[(2-chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)benzamide;

N-(5-{{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)cyclopropanecarboxamide;

4-(Aminosulfonyl)-N-(5-{{2-[(2-chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)benzamide;

N-(5-{{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-4-[(dipropylamino)sulfonyl]benzamide;

N-(5-{{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)-1H-imidazole-4-carboxamide;

25 N-(5-{{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl)

1)-3,4,5-tris(methoxy)benzamide;

N-(5-{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl

1)-3-pyridinecarboxamide;

N-(5-{2-[(2-chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl

5)-2-(methoxy)acetamide;

N-(5-{2-[(2-Chlorophenyl)amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl

1)-2-(4-methyl-1-piperazinyl)acetamide;

4-(4-Methyl-1-piperazinyl)-N-{5-[6-oxo-2-(phenylamino)-1,6-dihydro-4-pyrimidinyl]-1H-benzimidazol-2-yl}benzamide;

10 6-(2-Amino-1H-benzimidazol-5-yl)-2-{[3-(methoxy)phenyl]methyl}amino)-4(1H)-pyrimidinone;

N-{5-[2-{[3-(Methoxy)phenyl]methyl}amino]-6-oxo-1,6-dihydro-4-pyrimidinyl}-1H-benzimidazol-2-yl}-2-thiophenecarboxamide;

6-Benzo[1,3]dioxol-5-yl-2-(3-methoxy-benzylamino)-1H-pyrimidin-4-one;

15 6-(1,3-Benzodioxol-5-yl)-2-(1H-indazol-5-ylamino)-4(1H)-pyrimidinone;

6-(1,3-Benzodioxol-5-yl)-2-{[3-(methoxy)phenyl]amino}-4(1H)-pyrimidinone;

3-{[4-(1,3-Benzodioxol-5-yl)-6-oxo-1,6-dihydro-2-pyrimidinyl]amino}benzenesulfonamide;

6-(1,3-Benzodioxol-5-yl)-2-{[2-(methoxy)phenyl]amino}-4(1H)-pyrimidinone;

20 2-[(2-Chlorophenyl)amino]-6-(4-pyridinyl)-4(1H)-pyrimidinone;

2-(1H-Indazol-6-ylamino)-6-(4-pyridinyl)-4(1H)-pyrimidinone;

3-{[4-Oxo-6-(4-pyridinyl)-1,4-dihydro-2-pyrimidinyl]amino}benzenesulfonamide;

2-{[3-(methoxy)phenyl]amino}-6-(4-pyridinyl)-4(1H)-pyrimidinone;

25 2-(Phenylamino)-6-(4-pyridinyl)-4(1H)-pyrimidinone;

Ethyl 3-{{4-oxo-6-(4-pyridinyl)-1,4-dihydro-2-pyrimidinyl}amino}benzoate;
4-{{4-Oxo-6-(4-pyridinyl)-1,4-dihydro-2-pyrimidinyl}amino}benzenesulfonamide;
6-(4-Pyridinyl)-2-(4-pyridinylamino)-4(1H)-pyrimidinone; and
N-(3-{{4-Oxo-6-(4-pyridinyl)-1,4-dihydro-2-pyrimidinyl}amino}phenyl)acetamide.